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Applicants' invention relates to a method for managing information and rendering discounts in a billing system. Page 1, ll. 4-5. Customer bills are often adjusted by various discounts. In an existing method for rendering discounts, a complex application specific software package is developed to render discounts in a particular billing system having a highly defined structure. Page 1, ll. 13-15. The application specific software package is tailored to meet the needs of a single company for which the software package is developed. As such, in an existing method for rendering discounts, it is not feasible to change the way in which discounts are rendered very often because the software package is so application specific that it is sometimes necessary to develop an entire new application specific software package in order to revise the discount rendering technique. Page 1, ll. 13-24.

Applicants have recognized the problems associated with these existing complex application specific software packages developed for rendering discounts in billing systems. Applicants' claimed invention provides an improved method for managing information and rendering discounts in a billing system that utilizes a rule based engine configured to accumulate data and render discounts.

Claim 1 recites a method for managing information and rendering discounts in a billing system. The method comprises receiving a record including data, establishing a rule based accumulation engine, and processing the record. The record is processed with the accumulation engine to accumulate the data in a plurality of predetermined target accumulators. The method further comprises establishing a rule based discount engine, and processing the plurality of target accumulators. The plurality of target accumulators are processed with the discount engine to render discounts applicable to the customer.

Before addressing the art based rejections, applicants comment on claim interpretation for purposes of examination. The Examiner is correct in that the terms should be given their broadest reasonable interpretation. M.P.E.P. § 2111. Such an interpretation requires that the claims be given their plain meaning unless they are defined in the

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specification. M.P.E.P. § 2111.01. However, plain meaning refers to the meaning given to the terms by those of ordinary skill in the art. M.P.E.P. § 2111.01.

Applicants believe that page 2, lines 8-15 of the specification, taken in light of page 1, line 7 - page 2, line 3 (background art), when read by one of ordinary skill in the art does give considerable guidance for the definitions of "rule-based accumulation engine" and "rule-based discount engine." As explained in the background art of the specification, an existing method uses a complex application specific software package developed for a particular billing system of a single company and having a highly defined structure. The software package is so application specific that it is sometimes necessary to develop an entire new software package to revise the discount billing technique. For these reasons, there is a need for a method for managing information and rendering discounts in a billing system that is more easily modified, and may be ported to different platforms without excessive difficulties.

The present invention utilizes, among other elements, a rule-based accumulation engine and a rule-based discount engine. A rule-based system is a non-application specific, configurable, system that processes input data to produce output data wherein the processing is dictated by a set of (configurable) rules such as if-then statements. Rule-based systems are well-known to those skilled in the art and the differences between a complex application specific software package and a rule-based system are well understood to those skilled in the art. In light of this, the meaning given to "rule-based accumulation engine" and "rule-based discount engine" and similar terms by those of ordinary skill in the art is a non-application specific, configurable, system that processes input data to produce output data where the processing is dictated by a set of (configurable) rules such as if-then statements. The meaning expressed immediately above is clearly the plain meaning to one of ordinary skill in the art, and is further reinforced by applicants' specification. Further, although the use of similar terms in subsequent paragraphs is in the context of a preferred embodiment, the uses of these terms are consistent with the meaning expressed above.

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Regarding Benyacar (U.S. Patent No. 5,003,584), this patent describes a method and apparatus for the billing of value added communication calls. The described method provides a sponsor realtime access to rate tables to specify call billing parameters needed to rate calls made to a sponsor number (such as a 900 number). A billing number is determined and validated and used to identify the party to receive a billing record for the call. A separate billing record is created for each call to the sponsor's number which includes a sponsor specified charge as determined using the call billing parameters. As explained in col. 10, ll. 44-59, the caller's and the sponsor's bills are generated from the AMA billing record in a well-known manner (ll. 43-45). That is, although Benyacar mentions an AMA billing record and a telephone bill, there is no description or suggestion of the specific discount rendering method recited by independent claim 1. Applicants' claim a specific method for managing information rendering discounts in a billing system comprising, among other steps, processing the customer record with a rule based accumulation engine to accumulate data in a plurality of target accumulators and processing the target accumulators with a rule based discount engine to render discounts applicable to the customer. The claimed invention utilizes two different rule based engines (accumulation engine and discount engine) to manage information and render discounts in a billing system. Benyacar mentions billing records, but fails to describe or suggest the method recited by independent claim 1.

Applicants note that the Examiner relies on principles of inherency in rejecting claim 1 as anticipated by Benyacar. M.P.E.P. § 2112.02. The Examiner states that Benyacar necessarily performs the claimed method, and directs applicants' attention to col. 10, lines 44-59. Applicants believe that Benyacar does not necessarily perform the claimed method. Specifically, as explained in col. 10, lines 44-59, the callers and the sponsors' bills are generated from the AMA billing record in a well-known manner (lines 43-45). The well-known manner of bill generation used by Benyacar does not necessarily perform the claimed method. For example, the well-known manner of bill generation used by Benyacar could be the existing method for rendering discounts described in the background section of applicants' patent application as opposed to being the method recited by independent claim 1. Because the Benyacar inherent method could be any of a number of bill generation methods, it is inappropriate to reject independent claim 1 as anticipated by Benyacar.

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Regarding Jagadish (U.S. Patent No. 5,915,006), Jagadish describes telephone aggregated billing. This patent does describe a method and system in which calls made on two or more phone lines of a customer are aggregated for billing and discount billing plans to which the customer subscribes are applied to the aggregated phone usage of the customer. In col. 4, ll. 35-49, Jagadish mentions applying customer specific parameters to a call, and using automatic number identification (ANI) to determine the identity of the party who initiated the call. However, applicants point out that independent claim 1 recites a specific method for managing information and rendering discounts in a billing system that is not described or suggested by Jagadish.

In applying both of the applied references, the Examiner had pointed out general teachings of processing billing records and rendering discounts. However, both of the relied upon references fail to specifically describe or suggest the claimed invention as recited in independent claim 1.

Claim 10 is an independent claim reciting a discount system for managing information and rendering discounts in a billing system. The discount system comprises a rule based engine configured to receive a customer record including data, process the record to accumulate the data in a plurality of predetermined target accumulators, processed the plurality of target accumulators to render discounts applicable to the customer. As explained above with respect to claim 1, the relied upon references fail to describe or suggest a rule based engine in a discount system for managing information and rendering discounts in a billing system. As such, independent claim 10 is also believed to be patentable. Independent claim 11 recites a computer readable storage medium and is believed to be patentable for similar reasons as those given above with respect to claim 1. Claims 2-9 and 12-19 are dependent claims and are also believed to be patentable.

Claims 6 and 16 are believed to recite additional patentable subject matter by reciting assigning a logical name to a source field, wherein the accumulation engine processes the record using the logical name. Regarding claims 6 and 16, the Examiner has directed applicants' attention to Jagadish, col. 4, ll. 47-54. This portion of Jagadish describes

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automatic number identification (ANI) and fails to describe or suggest the claimed assigning of a logical name to a source field. As such, claims 6 and 16 are believed to be patentable for these additional reasons in addition to being patentable for their dependency.

In summary, the Examiner has interpreted the claims inconsistently with the broadest reasonable interpretation by those of ordinary skill in the art. To those of ordinary skill in the art, the terms of the claims have a plain meaning, a rule-based system is a non-application specific, configurable, system that processes input data to produce output data where the processing is dictated by a set of (configurable) rules such as if-then statements. This meaning is clear to those of ordinary skill in the art, and is reinforced by page 2, lines 8-15 of the specification taken in light of page 1, line 7 - page 2, line 3 (background art). Further, additional uses of similar terms in the application, although in the context of preferred embodiments, are consistent with the plain meaning asserted by applicants. The Examiner has given an unreasonable claim interpretation that is not consistent with M.P.E.P. § 2111 and then rejected the claims based on general teachings of processing billing records and rendering discounts shown in Benyacar and Jagadish. Applicants also believe that the inherency rejections are clearly inappropriate because there are many different ways to generate discounts and applicants' claims define a specific technique of generating discounts. In summary, claims 1-19 are believed to be in condition for allowance and such action is respectfully requested.

Respectfully submitted,  
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